

**LANTHANIDE (III) - DOPED NANOPARTICLES
AND THEIR APPLICATIONS**

ABSTRACT OF THE DISCLOSURE

5

A photonic material comprising a core and an envelope is provided for use in telecommunications, diagnostics, imaging and other applications. In its simplest form, the core comprises at least one nanoparticle. The nanoparticle comprises an inorganic material and at least one luminescent ion, wherein the inorganic material is suitably
10 selected to bind the luminescent ion. The envelope comprises a suitably selected organic stabilizing layer that overlays the core. The core and envelope may have a shell located between them.